

Oral presentation abstract:

Toward an Integrated Solution to Mitigate the Impact of Volcanic Ash to Aviation

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The science community is making a concerted effort to improve the reliability of dispersion models for the forecasting of volcanic ash plumes. Toward this end, it has been observed that the assimilation of diverse, accurate and frequent surface, airborne and satellite observations of the source and distal ash plumes may hold the key. Various international research organizations and operational agencies make these observations using a variety of active and passive remote sensing systems and use them to initialize atmospheric trajectory and dispersion models. These observation systems range from surface LIDAR and ceilometers, to airborne radiometers and nephelometers, to satellite radiometers, multi-spectral imagers, LIDAR and UV-photometers. None of these systems alone is a panacea, however, their synergistic application holds great promise toward solving this complex problem. Additionally, the aeronautical and science communities are working to better understand the quantitative thresholds and tolerances of aviation systems to volcanic ash to better inform scientists of the accuracy requirements for dispersion model forecasts. A number of the most recent and promising efforts in all of these area are discussed in this presentation.